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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,486	02/22/2002	Oleg Ershov	AAQUL0105	8466

7590 09/24/2003  
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EXAMINER

GABOR, OTILIA

ART UNIT PAPER NUMBER

2878

DATE MAILED: 09/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/080,486

Applicant(s)

ERSHOV ET AL.

Examiner

Otilia Gabor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 15-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 27-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 02/22/02. 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of claims 1-14, 27-30 in Paper No. 08/04/2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 15-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 08/04/2003.

### ***Claim Objections***

3. Claims 3 and 6 are objected to because of the following informalities: the SI unit for the wavelength of the radiation is incorrect, "um" should be --μm--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 4, 8-14, 27-30 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Tell et al. (U. S. Patent 5173749).

Tell et al. discloses an apparatus and method for remotely detecting a gas molecule present in a sample. The sample can be a fluid, such as beer, where the gas concentration in the fluid is measured using this method, but it's not limited to that. The method also can be used in the fermentation process (to determine the concentration of alcohol in the sample). The apparatus comprises:

- a tunable diode laser 1 for emitting radiation at the maximum absorption band of the gas molecule under investigation, where the laser diode is tuned to the desired absorption band by changing the temperature of the laser and by controlling the current supplied to the laser diode. The laser current control is done through a first connection into the diode laser and the temperature of the diode is controlled through a second current connection to the diode laser via a Peltier cooler (claim 4). See Figs.10a and 11a.
- a single mode fiber coupling 2 whereby the emitted laser light is carried into the measurement cell 4 from the laser diode 1. This type of connection diminishes the spatial inhomogeneity of the emitted laser radiation.

The gas molecule detection apparatus further comprises a beam splitter 19 whereby the emitted laser light from the diode laser is split into two optical channels, one channel going to the sample cell 4 where the specific gas molecule is investigated and where the presence of the specific gas molecule is detected by a detector 41, and a second channel which connect to a reference cell 5 where a known reference sample is investigated and wherefrom detector 51 provides absorption reference of the content of the cell 5. (claims 8-11). The content of the reference cell is dependent on the specific

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measurement to the done, i.e., when measurement is done on beer, it inherently will contain water (claim 12).

Both, the reference and the measurement cells, are capable to reflect the incident radiation numerous times so that the light passes through the cells multiple times before it is detected, thus amplifying the signal. (see Figs.13a-15) (claims 13-14).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 3, 5, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tell et al. and further in view of Azzazy et al. (U. S. Patent 5349187) and admitted prior art (page 3).

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Tell et al. discloses a tunable laser diode that is capable of being tuned to the absorption band of the gas molecule under investigation, however since his method and device is applicable in many different fields he only exemplarily discloses a set of wavelength bands for a particular gas. He does not limit his method to that particular band, however. Thus in the case of alcohol molecule detection, using the claimed absorption band would have been obvious to one of ordinary skill in the art since according to the conventional method disclosed by Azzazy et al. alcohol molecules exhibit strong absorption at around 1.5  $\mu\text{m}$  (see Cols.4,5) and since according to the admitted prior art (page 3) the sharpest absorption occurs at between 1.3924-1.3935  $\mu\text{m}$ .

Also, applying a current with the claimed pulse of 3.6 ms constitutes an obvious step to one of ordinary skill in the art since the current applied depends on the desired absorption range and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges constitutes only routine skill in the art. *In re Aller*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955).

### ***Conclusion***

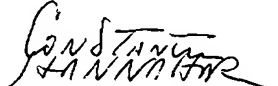
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lebmann (U. S. Patent 5528040), Tulip (U. S. Patent 5748325).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Otilia Gabor whose telephone number is 703-305-0384. The examiner can normally be reached on Monday-Friday between 8am-5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 703-308-4852. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
CONSTANTINE HANNAIER  
PRIMARY EXAMINER  
GROUP ART UNIT 2878

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